

**PRACTICAL  
ESSAYS ON  
MEDICAL  
SUBJECTS. BY A  
MEMBER OF...**

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**PRACTICAL ESSAYS**  
**ON**  
**MEDICAL SUBJECTS.**

*by a Member*  
*of the Royal College of Physicians of London*  
*and Edinburgh.*

*Cicilia antea.*

*Orca. Mamm.*

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AN  
ESSAY  
ON THE SAFETY AND EFFICACY  
OF  
POISONS,  
*Exhibited as medicines, when properly  
dosed and administered;*  
manifested by the use  
of  
CORROSIVE SUBLIMATE MERCURY,  
LAUREL WATER, DEADLY NIGHTSHADE,  
PURPLE FLOWED FOXGLOVE  
AND HEMLOCK.





*On the safety and efficacy of poisons  
exhibited as medicines.*

**R**eason and observation having fully convinced me, that the mildest and best of remedies improperly used, often did harm; I was naturally inclined to believe, that the most violent and dangerous, if properly dosed and administered, might likewise do good. And as the sick under the use of the first, were generally obliged to a disagreeable and long perseverance to obtain relief; I thought, that whatever could be given in a narrow compass and would quickly produce it's effects, must prove not only most agreeable to the patient, but also most likely to do honour to the physician. Animated by these considerations, and the natural reflection that in proportion as the shade of any one article made it's destructive, it's proper use might render it salutary; I made many experiments on brutes with different poisons as the most likely subjects to afford the wished for remedies, and though by means thereof I did not discover their medical virtues, I was not only convinced, that in certain doses many of them

were not destructive, but might also by their union with other articles, be made so mild as not to be materially operative; however the result of all my experiments never gave me sufficient courage to prescribe any of them as medicine, until by an accidental event, I was indubitably convinced that corrosive sublimate mercury, which was one of the poisons I had experimented with, was not so deleterious as was generally imagined and had some digestive virtues. The case was this: Sarah Humes a poor woman excessively ignorant, being in a bad state of health and in a very unhappy situation, resolved to destroy herself; for that purpose she bought a quantity of corrosive sublimate mercury, and put it into a glass of water with an intention to drink it, but being timid suffered it to stand till the mercury was in a great part dissolved; so that when she began to drink it, the taste was so very disagreeable, that after she had taken a spoonful only she could swallow no more, and almost instantly perceiving her throat to be affected with a burning heat, she without being asked consulted her folly and begged for relief; whereupon a neighbour was immediately despatched to call me to her, but being then in the country some miles from town I was four hours after

without feeling her, during most part of which time she had been vomiting violently and scorched with pricking burning pains in her mouth throat and stomach; the two former of which, as far as was in sight, had on them several blisters and great inflammation, though the people about her had very judiciously supply'd her with plenty of warm water and oil to mitigate the complaints; and which certainly preserved her from her mortal fate, notwithstanding she was severely punished for her impious insubordination, by the forebells of her mouth and stomach rendering her many days unable to eat without great anguish; though instantly on my arrival I gave her draughts of lime water and oil with inter-mediate doses of tincture of Sassafras as an emollient decoction made pectorate with mamon and frons; by the use whereof for a few weeks she grew perfectly well, and quite free from a most inveterate itch and some obstinate pocky symptoms, that had eluded the force of a long use of mercury in other shapes. Hence I was firmly persuaded that this medicine in judicious hands might be safely ventured on; and making my remarks upon it to one Mr. Bliford a very celebrated old practitioner with whom I was intimate, he told me, that in cases wherein his reason had

born at a loss from the obliquity of the doctor, he had often prescribed it with uncommon success; and for my further conviction referred me to the examination of two or three of the patients to whom he had administered it, the cure of each of whom spoke greatly in it's favour. The form in which this gentleman prescribed it was this: To eight grains of the corrosive sublimate<sup>Mercury</sup> he joined an equal quantity of opium and camphire and three times it's weight of pure salt of tartre, the whole of which after being rubed together for some time, he made into eight pills with a sufficient quantity of conserve of hips, and called them by the name of pills for pain; one of which he gave every, or every other night, as occasion required; by means whereof he assured me, that he had performed many astonishing cures, without having ever experienced the least ill consequence from their use, and even when without their producing any sensible operation. This report greatly strengthened my opinion of the virtues of this medicine; but considering that the great efficacy of the mercury in the sublimate, solely depended on it's union with the acid salt, and that it must be decomposed by it's junction with the alkali of tartar, I did not wonder when I observed the proportion directed to the sublimate, that the pills do con-

posed should be so very safe and gentle, especially as it was most probable, that if by the slight stimulus of the articles any degree of stimulating property remained in the sibilant, the opium given in conjunction therewith would restrain it's action, in case the stimulus should fail of that effect. I looked therefore on the experience, which this gentleman had had with the sibilant, to be in no respect satisfactory in demonstrating either it's virtues or safety, having been then lately convinced by an information I had had from the very learned and ingenious Dr. Wall of Worcester, that the effects of sibilant mercury were totally destroyable by an alkaline salt, as he had fortunately experienced upon himself, after having swallowed a large dose of it dissolved in distilled water, instead of another sibilant he intended to take. The circumstance was this. The Doctor living not a very great distance from the celebrated purging springs of Cheltenham in Gloucestershire, to which his patients had frequent recourse, he thought it his duty to enquire into their nature and properties, that he might speak of them with propriety and knowledge, and for that purpose being provided with a variety of necessary articles to make experiments by additions to the waters at their fountain head, he made

a wife to the spring, to observe what phenomena they would afford there, different to what they did by the same additions at a distance from their source. Amongst these articles to be added to the water, was a solution of corrosive sublimate in distilled rain water and another of an exactly neutralised tartre of vitriol; the first of which the Doctor poured into a glass of the water instead of the latter, and hastily drank the whole of it before he discovered his error; but immediately after finding his mistake and having in his pocket another phial containing a filtered solution of the pure alkali of tartre, he diluted that with some water in another glass, and as soon as possible drank it on the sublimate; by means whereof and promoting the evacuation two or three times successively with a sufficient quantity of warm water, he almost instantly eased his stomach by bringing them up together as yellow as the yolks of eggs without being sensible of the least injury from the accident the next day. Encouraged by the preceding particulars and the profession, of that celebrated Surgeon Whiston who does honour to our country, in which he informs us that he had frequently with success exhibited drops of a strong solution of corrosive sublimate with spirit of wine, in common water gruel, as a cure for venereal complaints; and finding

also that addition in the 10th. part of a grain well mixed with a drop of the inspissated juice of the elder berry, stands recommended by the deservedly eminent Boerhaave on his treatise on the power of medicine, as the best medicine in the like disorder, I looked upon it as a sufficient authority to justify it's use; and having a patient under my care of a very phlegmatic constitution, who could take nothing as substance and with whom I had reason to believe mercury might be beneficial in the cure of an inveterate heartburn that had been troublesome for years; I directed three grains of salivaria in two ounces of colicwater and one ounce of syrup of violets, to be taken a large spoonfull every morning, which in three days not only perfectly freed her of the pain that had tormented her so long, which she expell'd with the highest ease; but on the fifth day from her taking the first dose, had evidently seized her gums though she had taken a grain and an half only of the mercury; which I no sooner observed but I immediately gave her a purge which operated very briskly; yet in despite thereof and all I could do to prevent it, a salivation came on and continued to increase for fifteen days, when it began to decline and went off gradually, without

ever being followed with any return of her old complaint. Alarmed by this unexpected event, although it was accompanied with the perfect cure of my patient, being then but young and unestablished in my profession, I did not dare to persevere in making experiments with so known a poison; but four years after when these circumstances were changed, I resolved should a proper opportunity offer to try it again, but never to exhibit it without it's protection with a purgative lest a salivation should surprise me again as it had done in the former case. Thus resolved it was no long time before a proper opportunity offered by a number of soldiers being put under my care, several of whom had many venereal symptoms of the first infection, to cure which I directed a scruple of the corrosive sublimate mercury to be dissolved in a marble mortar with a drop or two of water, then well rubed with a like quantity of powdered camphire and afterwards beat into a mass with three drams of the lesser pill cochon of the London Dispensatory, and so made to be divided into forty pills of equal weight; one or two of which, according to the strength of my patient, I ordered to be taken every night, by means whereof and drinking freely of muldow-ten, I had the satisfaction to see all of



them expeditiously recover without the least ill effects happening to any one of them, either while the medicine was in use or afterwards. This experience I had in the year 1748. Since which amongst the common people I have ever had recourse in the like case to these pills, nor have I in the course of any case ever had occasion for the use of any other means, except now and then in particular habits a bleeding or two and in the end a gentle balsamic, but these helps have indeed been very seldom necessary. To unite all the particular instances of the kind which I have successfully treated with this medicine, would be sufficient for a large volume, yet I should hardly have been encouraged to have ventured on the publication without a pargative any more, had it not been recommended to the world under the sanction of that deservedly eminent physician Baron van Swieten by whose indefatigable and for the welfare of the public we have a most excellent comment abounding with true learning and knowledge on (\*) the aphorisms of the

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(\*) On this book my worthy and ingenious friend the late Dr. James Mahon, in his very excellent and learned history of books, page 454. relates the third, reading of the prophetess or art of preserving disease, has the following words „It is astonishing that the

illustrious Boerhaave, whereby the lessons of that great luminary in physics, are delivered down to succeeding generations with very great improvements, and I will boldly assert, that it is a work if duly regarded will make more medical students good physicians, and more empirical Doctors rational practitioners than any other publication in the science of medicine.

The folio was no longer recommended to the public by this learned commentator, who advised it to be taken diluted in brandy; but I had the pleasure to see, that from the confidence the world had in his judgment, it was by many especially our surgeons in the army readily embraced; and we had every day more and more instances made of its hap-

portunity of one man should be 'able to collect  
 how to deal a volume, in Boerhaave's aphorisms of  
 learning and curing diseases, all that is doubtless among  
 the ancient and modern on that subject; yet as  
 far as I am able to judge, there is scarce any pre-  
 cept contained in these aphorisms, which is necessary  
 to give the young physician a clear insight in-  
 to the nature and cure of almost every disease  
 incident to the human body. The medical  
 observations which are made in the practice of phy-  
 sics, ought to be taught in every university, and as  
 currently explained and illustrated with sensible re-  
 marks and observations, by that ornament of his  
 profession, the learned and humane Dr. Nathaniel,  
 in the university of Edinburgh."

py effects, by the influence whereof it soon got admission into our general hospitals, where it was fairly and fully try'd with good success, yet not without several instances of its failure and even of mischievous effects to a few, in consequence whereof it had both its partisans and opposers and by many persons who had been rapidly cured by it relapsing into their former complaints, perhaps from their desisting from it to soon, such a prejudice prevailed against it, that it fell into disuse in the hospitals. Yet in private practice, the ease with which it was taken and the certainty that it had very often succeeded, preserved it many advocates, amongst which, from the least I had long before conceived of the influence and the good I had seen it do in the above described pills, I own I was one; but being credibly informed by several of my physical brethren, that of those who had taken it there were many where it had succeeded, and some also who by its use had not only spoiled their stomachs but had likewise been tortured with great pain and bloody stools, though they confessed that were it had been properly persisted in, it had failed in but very few instances, I resolved to try it in another manner. And judging its superior efficacy over other mercurials to depend

on it's greater solubility, and that the mildness of it's action in the mucous tubes of the body arise from the degree of it's dilution — Seeing the solution of it in brandy was apt to precipitate, I thought the mischief it had some times occasioned might have arisen from thence; from this consideration I made many experiments with different menstrua to discover it's best solvent, and amongst them all found none equal to common water which had been previously distilled, and which without distillation I could never find to hold it long in perfect solution so as not to precipitate; I therefore in order to prevent it's too hasty precipitation when I might have occasion to prescribe it, directed that fifteen grains of the fish-mare should be dissolved in a pint of common softwater and kept as a standard in the apothecary's shop, under the name of the aqueous solution of fish-mare; and to be particularly cautious that it was always prepared with a glass pebble and mortar that it's acid might neither attack or be attacked by any metallic substance and a decomposition arise; from a neglect of which caution, there is too much reason to believe that it has either lost it's efficacy or been rendered incapable of entering into the blood, so as to produce the necessary change in the second fibres of vessels, and has likewise brought

on that violent irritation in the first passages which in some instances has attended its use; from an eye to which I began with dressing two ounces of the above solution to be administered at different draughts within every twenty four hours, mixed in thirty two ounces of a decoction made by boiling two ounces of *Scirpavilla* roots and half a dram of the bark of the *marian* root in two quarts of water to thirty four ounces and sweetening the whole with a sufficient quantity of sugar; but experience soon taught me that the medicine so made was too strong and would not only be more gratefull but more effectual also, if only one ounce instead of two of the aqueous solution above described was added to the decoction; I therefore kept to that proportion in preparing this medicine, which even in that quantity it had a purgative effect, in which case I constantly lessend the proportion of the former to the latter, till it had lost that quality; convinced that the longer it stayed in the body the more salutary it would prove, and I have seen innumerable instances in which by a quart of the decoction, wherein has been mixed from six drams to an ounce of the solution, taken every twenty four hours in such doses as not to offend the stomach and continued for twenty or thirty days successfully, wearing at the is-

will equally with mineral salts answer my purpose of demonstrating that this poison properly doled and administered may be a salutary medicine.

One Mary Neal of the Parish of Eadbury in the County of Worcester, a woman about fifty years old of a thin spare habit of body and pale complexion, for fifteen years had been more or less subject to a disease of her skin, which at different times affected different parts; it always began with a sense of soreness attended with redness and heat, and after having continued to a few days put on the appearance of a burn and discharged a great quantity of sharp limpid water which spread the complaint on the parts it ran over, in this flux it generally continued for eight or ten days, when it gradually subsided and leaving a sore open the pain disappeared but soon after shewed itself again and was the same course in another place, in such a manner that she was truly a stranger to a weeks ease or health. For the relief of this malady she had applied to many very able physicians, by whom at different times she had been treated with mercurial purgatives, calomel mineral, various antiscalds, sulphur, vegetable and animal decoctions, the bark and lime water, besides which she had had recourse to the prying waters of Cheltenham and to a milk diet, and was by

daily means for some time better for a while but never lastingly — Under these circumstances to gratify her solicitations rather than from any confidence of it's proving materially beneficial, I recommended to her trial the aqueous solution of salutarin in the Sarsaparilla decoction as it is above described, and advised her at the same time finally to adhere to a milk and seed diet; all which she punctually observed with little or no effect for about fourteen days, but after that time it began to make her sweat profusely in the night and to afford her considerable relief, which increased so fast that within a fortnight from the commencement of her sweating her complaints disappeared, yet she continued the course for another month, and from that time which is now six years, has never had the least relapse or any other disorder connected it, but has been happily blessed with perfect health.

Mrs. Mary Penn of Barbury in Oxfordshire aged thirty five, a gross corpulent woman of indolent disposition but well regulated as to the benefit of nature, had been many years afflicted with several fœdral ulcers in her legs and a great number of blotches on her skin; the first of which were very offensive to the smell, excruciating painful at times, and constantly discharged a watery ichor; all which complaints though

of so long standing, were radically cured by the use of the before mentioned solution and decoction, without drinking of it more than a pint a day or continuing longer than three weeks.

Mrs. Anne Riley of Fowich near Worcester, a young lady of florid complexion and tolerable good health, of the age of eighteen; and Miss Mary Leigh a very fair delicate child of only seven years old, were both of them several months affected with a very violent watery discharge from behind their ears, which in both of them was so very acrid as to excoriate the skin all round about the part that was affected; it was attended with a most violent itching, appeared very dry and as though it had been scorched; their complaints in neither of them gave way to diuretics, cooling purges, repeated doses of calomel, blisters or others, every of which in their turns had been tried for their relief; yet they were severally cured by the use of this decoction and solution in less than three weeks, as many others have been, who with a like fluxion behind from their ears have become the objects of my care.

I could recite many other cases similar to these in which this medicine has been equally successful in perfectly curing the most obstinate exantematic complaints attended with a moist



discharge, but I must also confess that where the eruptions have been dry and sticky without being accompanied with venereal symptoms or fungus, I do not recollect a single instance in which it has succeeded.

Mrs. Mary. White of Exeter in Wens-  
onshire, a tender delicate gentleman of a  
lunatic and pale complexion, had been afflicted  
when she was very young with a most violent  
fever which terminated critically by an abscess  
in her arm, the opening whereof the surgeon  
who attended her and who was skilful could  
never be healed as not in a very short time to open  
again, or to leave her free from pain when the  
part was healed. She was also at times severely  
tormented with rheumatic pains in her other  
limbs, and was frequently affected with a natural  
diarrhea, on the cessation whereof she generally  
got easy for eight or ten days except in the dis-  
eased arm. For these complaints she had taken  
mercurial and antimonial purges, galeum de-  
coctions, and an infinite tribe of other reme-  
dies, till finding them all ineffectual she gave up  
her hopes of cure from any — In that state I  
advised her to the trial of this solution and  
decoction, which she entered upon cheerfully  
and by taking only a quart of it every twenty  
four hours for fifteen days successively was

happily freed from all her complaints; the sore healed her pains ceased and although her diseased arm was greatly wasted, yet it is now as strong as the other, and she has not since had the least return of any one symptom of her disorder.

Mrs. Elizabeth Martin of Peabworth in the County of Gloucester of sanguine constitution and naturally healthy, was about the age of thirty very severely afflicted with the natural small pox, and with the secondary fever consequent thereon was in the utmost danger all the twenty eight day, so that it was with the greatest difficulty that her life was preserved; and even after the danger of her life was over, her eyes were so injured by the disease that she was for months nearly deprived of her sight, having their external membranes almost constantly covered with painful ulcerations & great inflammation, from which she was at last relieved by a continued course of mercury with diet and copious bleedings; but two years after from an accidental cold the disorder returned as violent as ever, and it was feared that she would be quite blind, the same course of medicine which had succeeded with her before and castles behind her ears having proved ineffectual; under these circumstances having lost of

medicines & lost all hopes of cure for above two months, I began her trial of this decoction & solution of which she took a pint a day for six weeks, and before the expiration thereof was perfectly recovered of her sight, the inflammation had left her & she had no remaining mark of her disease but weakness & an inability to bear a strong light, from both which by the use of the bark inwardly & sponges dipped in cold water applied to her eyes externally, she was soon freed and never afterwards had the least relapse.

Mr. William Smith a tradesman in the town of Exeterham before mentioned, a man much accustomed to drinking and an irregular way of life, of a pale complexion and bilious constitution, between forty and fifty years of age, had for three years together been severely tormented with an obstinate scatica and wandering rheumatic pains, by which at times he was for several weeks confined to his bed, and for his cure had taken many repeated mercurial purges, turpith several vomits, electuaries with chamber gassons and turpentine, had been frequently bled and used both hot and cold baths with blisters to the part, which though they some times relieved him for a short time produced no lasting good effect; yet after the failure of them all, by a quart of the decoction and solution before described taken in small

defec once every twenty four hours for one month, and the constant use of a flannel waist-coat next his skin he was radically cured; as have many others who have been under my care for the like complaints; though I must confess this medicine is not infallible in all wandering pains *flatulæ* and *rheumatism*, for I have often tryed it in these last-mentioned, yet it has been so frequently successful in both complaints, that where they do not yield to common means it well deserves a fair trial; especially as it's general operation is a free perspiration without any one disagreeable symptom where it's effects are properly attended to.

From a dissection upon the preceding cases and other similar instances which have happened in the course of my experience with the corrosive sublimate mercury, I am inclined to believe that it operates principally on the lymph by powerfully stimulating or correcting that part of the blood in such as have it too thick or acrimonious, and from the experience itself it has afforded in several persons who have been tormented with wandering pains which have been esteemed to have been rheumatic and gouty, and it's having no such effect on others under the like complaints, there is reason to conclude, that those persons to which it has been successful have generally if not always had a cause

not truly pass for the origin of their effects.

The very small quantity of mercury contained in the sublimate used in these cases, and the similarity evident in the figure of the particles of sublimate with those of sweet mercury or calomel, demonstrably show the insufficiency of that theory which attributes the virtues of mercury to the gravity or figure of it's particles alone; it being certain that if it's great powers arose from those properties, they could never be produced as they are by so very small a dose of the sublimate, and would most certainly follow, which they do not, from a somewhat larger dose of the sweet mercury or calomel; it being impossible for the sublimate to augment the momentum of the blood impetus by it's weight or to excite by it's figure any effect we might not with equal reason expect from the calomel as well as from the sublimate, as they are both combined with the same vehicle & united by the same means. Unprejudiced with any fixed opinion we duly weigh these circumstances, with the different effects which follow from different preparations of mercury, & with those which are common to it under all it's forms; it is impossible if we are at all acquainted with the animal mercury, and the common laws of hydraulicks, that we can have any difficulty to

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And sufficient reason for a close examination of every argument advanced to demonstrate, that the efficacy of mercury depends either on it's gravity or figure. We must look therefore another hypothesis to explain it's effects, before we can confidently on the principles of theory direct it's use; though we may safely do it from the knowledge we have acquired by observation and experience. To discover the true means by which this great medicine brings about it's effects is an enquiry worthy indeed of the most able physician, and being discovered, may probably lead to greater and more salutary consequences than any which have ever yet been ascribed to this wonderful metallic fluid; but to prosecute the search in this kind of essay it's limited nature will not admit, yet I hope to be excused for dropping a few hints which may possibly be of use to such as have leisure and ability to undertake the task.

By chemical proofs it is now demonstrated that the solubility and penetrating principle of every solvent acts upon the body it dissolves by means only of it's particular affinity with that body.

That the solubility or penetrating principle inherent in certain bodies acts on another, however it may be diluted or divided by any fluid or other substance, with which it is dissolved

red or united; if it unites with any thing else to which it has a greater affinity than to that with which it was before blended, will more strongly attract that with which it has the greater affinity than be retained by that with which it was before engaged.

That in proportion as the penetrating principles of solvents have had opportunity of uniting those bodies with which they have the greatest affinity, they thereby lose the power of acting on other bodies with which they have less affinity; until they are united in such proportion together as not require to their perfect saturation; and how soon forever they may have been in their own nature in their separate states, by such union they become what chymists call *dephlegmated*.

To demonstrate these positions by some familiar examples — If the acid of sea salt, which has a stronger affinity with iron than copper &c with copper than mercury, be put into a proper glass for making a solution in the exact quantity sufficient to dissolve a dram of mercury, and a small quantity of copper be dissolved therein; in proportion as the acid has been employed by the copper it will have lost it's solvent power on the mercury; though when the unemployed acid by the copper is saturated with the mer-

cory, and the copper and mercury are quite dissolved therein; if steel be added to the solution, the acid in which the solution was made having a greater affinity with the steel than with the copper or mercury, will unite itself with the steel & drop the other two in dissolved precipitate.

So also if the acid of fix salt be fully saturated with mercury, its acidity will be insupportable; and the mercury which was mild itself before it's union with the acid will be rendered violently active, but if filings of iron or an alkaline salt is blended with the composition, the acid will quit the mercury; and it's acquired violence from it's union with the acid be destroyed, in consequence of the greater affinity of the martial earth or alkaline salt with the acid, than the acid had with the mercury.

Chymistry likewise teaches us that also from the union of two bodies together by their attractive power on each other, their solvent or penetrating principle one on the other not only becomes increased, but also that also they lose their further penetrability on each other in consequence of such saturation, they become able to penetrate and assault other bodies, on which before they were so united they had not the least power: Of this is the Monarch

□ §



of the Academy of Surgery of Paris we have a full proof, by the several mortars made with distilled vinegar and spirit of salt armoniac, which is commonly called *Mindererus's spirit*, dissolving the substance of tumours which neither the vinegar or spirit of salt armoniac alone was capable of dissolving.

Besides these particulars there is a material salt well known to every labourer in the apothecaries shops, which though very simple is not the weakest proof of the different degrees of affinity or disposition of mercury to unite with different substances; or of the greater resistance of one salt than another to attack and blend itself with this substance, which is the attraction of mercury with different saline substances in a common mortar; in which manner if it be rubbed with fix salt it will quickly and readily join itself in a very large proportion, with cream of tartre more slowly and in a less proportion, and with abstracted earths not without very long trituration, and even then but in a very small quantity and very loosely.

Another particular of great importance for us to know and reflect upon is this, that in proportion as any saline principle capable of dissolving or intimately uniting itself with mercury approaches to perfect saturation by its union

with it; it even when united therewith becomes much more mild and gentle in it's action or effects on the body; as a proof of this mercurial dulcis is much less operative than sublimate, calomel than mercurius dulcis, and the purest mercurius than calomel; and I have had proofs in the course of my experience of this observation being equally true in regard to the action of mercury, from it's union with the anemonics of the blood and stomach, as with different salts, for in febrile and putrid and particularly in those who have a disposition to acidity in the stomach, I have repeatedly found that a very large dose of the crude mercury united by trituration with any glutinous or absorbent substance, produced much milder effects than a small dose, and was infinitely less liable to salivate; for which I could assign no probable reason, but that of the natural acrimony by the larger quantity of mercury being more perfectly saturated, than it could possibly be by the smaller dose, and which fact admitted leaves not the least difficulty to account for the event.

☞ I will only add one other observation well known to most practitioners in medicine — Euphrasie has long since shown mercury to be the true universal remedy, and that by it's being used in as to salivation & salivation, it was

very rare a patient was not cured by it; in so much that salivation and mercury was called the means of the cure; but nature in some patients accidentally not producing a salivation or other discharge, after a proper use of the mercury for it, in whom the mercury equally produced the cure, as in those it salivated, it was clearly demonstrated, that it was not the salivation or evacuation excited by the mercury that was the means of the cure, but that the cure followed specifically by the abatement and continuance of the mercury in the blood for a given time.

From properly considering these several particulars, have we not some reason to think, that as mercury unites more readily with our bile than another, and dissolves or destroys the active quality of those bils it unites with, by it's union with them; and as the natural acrimony of animal fluids is of a bilious nature, different one from the other in different diseases, that the abounding acrimony in the venereal disease has a greater affinity with mercury, than with the acrimony of other diseases, or with the humours of the body in an healthy state, and that by it's union therewith, it becomes dissolved, and loses that corrosive disposition it naturally had before it's union with the mercury? If this be the case, as there is much

reason to believe it is from the discharge of a secretion not being necessary for its cure, and the cure following the use of mercury without it, there will be no difficulty to account, why so long a course of mercury is requisite to be provided in, before the mercury is absorbed which has fixed itself in the most remote parts of circulation, as that mercury is naturally extending till it is stopped by the mercury, why a specific alternative like mercury should be more effectual when it does not purge than when it does, why mercury united with salts should do more than crude mercury; and why sublimate which is so perfectly dissolvable and infinitely divisible, should sooner bleed itself with the lymph and reach the affected parts, than any other preparation of mercury. If we consider that the disease is a disease of the lymph; that the lymph is greatly more than one half of the whole blood, and of medicines externally applied or internally taken, unless such as are perfectly dissolvable with water and are not acrimonious, the part which enters into the blood is exquisitely minute, and perhaps not more in quantity than the visible dose we exhibit of the sublimate — What wonders do we see performed by the bark, and how small is the quantity of it which enters the blood, and which part only does the bark

ask? What effects have we not seen from the use of Chalkwater waters in removing internal obstructions? how small in quantity is the fluid they contain to enable them to do it, yet who can dispute their virtues? It is enough that we know them; and as by innumerable unexpected events we have been led into many very interesting discoveries, which human penetration could never have devised, of which we have been guided to a proper use by sagacious reasonings, we ought in duty to ascribe their benefits to their true source, and gratefully to acknowledge the bounty of that providence, whose goodness in accident has done more for our real welfare than all our wisdom.

It is not only the concrete substance necessary to universality by its state known to be defective, that under proper management may be made an instrument of health; but also many vegetable substances which are of the most violent and deleterious quality, as is evident from the happy effects which have been produced by proper doses of laurel water, the powdered leaves of the deadly nightshade, the juice of the purple flowered scorpione and the extract of henbane, of which in the order they here stand I shall notice a few instances.

The laurel grows on cherry trees, the leaves whereof by distillation affords an almond like,  
flavour,

flower; and have by distillation been used instead of the kernels of apricots or peaches in the preparation of rosein, and of the common black cherries for making the black cherry water of the shops, having by the particular accusations published of it in the philosophical transactions or memoirs of the royal society in London been proved the most violent and certain of vegetable poisons, the ingenious Dr. Langrish with a view to discover the nature of it's action upon the animal body, made many judicious experiments with it on humans, by which he clearly demonstrated, that it most powerfully attenuates the serum of the blood and kills only by it's immediate action on the nervous system, finding therefore many cases which would not admit of the use of any stimulating medicines, and in which attenuation was absolutely necessary; I determined, as often as any such fell to my care, cautiously and fairly to try what the distilled water of the hawth would do; and for that purpose, I gave it from one to two tea spoonfuls, or from thirty to sixty drops for a dose, three or four times a day, beginning always with the least, and augmenting it gradually to the largest quantity, without ever observing any one ill symptom to arise from it's use, though it most constantly subjected my intention of attenuating the blood, and without heating it at all; a cir-

confidence that can not be find, of any other known article in the materia medica, and of which fell the following cases are demonstrative proofs.

M<sup>r</sup>. Thomas Sney of Exeter, a gentleman whose family had been subject to insanity, whose mother had died of a cancer, and who was himself of a bilious and melancholic constitution; about the fifteenth year of his age was much afflicted with an obstinate pioderitis in his head, and with a scabiness in his hands and feet; for which he had been bled, had an ulcer in his neck, had tried various cephalics, and been repeatedly purged, without any material relief. The blood which was taken from his arm was excessively thick and infused, that after it had stood twenty four hours, it yielded scarce one fourth part of its quantity of lymph; which was looked upon to be the chief cause of the symptoms that afflicted him. On this account I recommended to his use, the distilled water of lavender, made in the proportion of one pound of the leaves to a pail of water; of which he at first took only thirty drops, twice a day in some rosbury tea; but feeling no ill effect from that, he gradually augmented the dose to double the quantity, and repeated it five or six times every twenty four hours, and thereby grew every day better and better. When he had continued it a fortnight, to fix the state of his blood,

four ounces of it only was drawn from his arm, when it's inflammatory state was much lessened, and the quantity of it's lymph greatly increased; he was therefore desired to persist in the medicine, which he did for three weeks longer, at which time he was free from all his complaints, and having by his own desire, another tea drachm of blood taken from his arm, to see if the texture of it was further altered since his former bleeding; it then appeared so far from being in an inflamed state, or of too thick a consistence; that it was quite florid on it's surface, and after standing six hours, separated more than one half of it's quantity into perfectly lymph; which being in large a proportion as it ought, I desired him to desist from the medicine, and without ever after having any necessity to return to it any more, he continued to enjoy both cheerfulness and health.

John Jones an industrious hard labouring man, a carpenter by trade, settled in the town of Evesham; after having been for some months much troubled with a rheumatism, gradually became afflicted with a great difficulty of breathing, was greatly oppressed with a load of very tough phlegm, had a full hard pulse and an obstinate dull pain about the region of his liver, he was let blood, and his blood was so very thick that after standing above



forty hours, it did not yield one fourth of its quantity in serum, two or three months before this he had spit blood, and was very apprehensive of doing so again — At different times for these complaints he had used blisters, and taken very freely of pectorals and neutral salts, without any sensible benefit; but within thirteen days by taking breast water as directed in the above case, with the assistance of two small bleedings, he was perfectly cured, and his blood returned to this, as on finding to separate more than one half of it's quantity, of well coloured lymph.

On mentioning these instances to my very worthy friend the learned and ingenious Dr. Cameron of Worcester, he carefully told me, that he had often used an infusion of this plant in obdurate obstructions of the liver with very great advantage; and that by means of a composition made with a meal from millet seeds, and a strong infusion of the breast leaves, or it's distilled water; he had not only greatly relieved many, but cured some very hard scirrhus tumours of a cancerous appearance, several of which before it's application had threatened the worst of consequences; and the truth of it, from this gentleman known integrity is not to be questioned.

Whether or not this medicine, used in the same or any other manner, would fairly

dissolve, or break that inflammatory (putrid) obstru-  
 ction in the serum of the blood of all  
 heathic people, I have never yet experienced;  
 but if by a previous irritation of the lungs, the  
 case be not become abnormally insensible, it cer-  
 tainly provides much, and merits a fair trial;  
 though in those instances wherein that circumstan-  
 ce is certainly present, it ought not to be resorted  
 upon, least the inflammation, which constantly  
 sooner or later assails people in that state, by  
 happening at the time that medicine is in use,  
 should be unduly and unnecessarily added to it's de-  
 terious quality, as fatal effects have already been  
 recorded of it's abuse, in the papers of the philo-  
 sophical transactions above referred to.

The deadly nightshade in latin called *Jelle-  
 donna* or *Solanum nigrum* is another plant of the  
 poisonous tribe, the fruit of which by the  
 common people, is distinguished by the name  
 of poison berry.— It's leaves have of late been  
 strongly recommended by the ingenious Doctor  
 Stark physician at Vienna, and M. Gouker a  
 celebrated Surgeon in this city; both of whom  
 have favoured us with many instances of it's  
 good effects in various disorders, but of which,  
 though I have tried it on five different indi-  
 viduals, I never found it do any thing worthy  
 of notice, except in the following instance;  
 yet I have the satisfaction to say, that it

was not productive of the least relief to either of the patients on whom it was not successful.

M<sup>r</sup>. Meyrick Field of Exeter, a gentleman of a very strong sanguine constitution, and who had been accustomed to enjoy a good state of health; was very suddenly seized, with a most violent pain in his throat & tongue, which threatened him with suffocation, and disabled him to eat or speak — thus afflicted he was first attended by Dr. Wall of Worcester, who supposing the disease to be gouty, treated him accordingly but to no purpose; the disease gradually increasing for about three weeks, when his pain was become very little, but his tongue even to it's very tip, was affected with an almost detestable hardness, without being accompanied with the least degree of fever; in this state I was consulted for him with the above mentioned gentleman, who joined with me in opinion, that it had a cancerous appearance, and was a very likely case to be relieved by the nightshade; we therefore prescribed it to him, in the dose of two grains only every night, in which quantity the very first night it excited great and an incredible discharge by urine; but after taking the third dose, the end of the tongue began to regain it's motion, and by continuing it for ten days longer,

the disorder perfectly disappeared without ever returning, or being followed with any other complaint, though it is now about six years ago.

It is remarkable that the great discharge of urine, which followed the first use of this plant in this singular complaint, was very limpid and colorless; whereas as such urine flows in great abundance from persons in the most violent hysterical complaints, on the discharge whereof the acids how violent fever generally arises, we may most reasonably conclude, that the baracks of the tongue affecting the genitalia, arose only from some violent spasm on the returning blood vessels from the affected part; and that the cure was performed by it's anodyne antispasmodic power, rather than by any deobstruent quality. It's effects in rheumatism and some other painful diseases, in which I have been informed by some very eminent practitioners, that it acts as a most powerful anodyne, gives great reason to warrant that opinion.

The efficacy of the expressed juice of fig-leaves, described by boracius under the name of *digitalis purpurea, folio aspera*, of which an extract has been long a shop composition is use for dyspeptic disorders, well deserves the practitioners notice; it is indeed not commonly ranked among poisons, yet is of a ve-

ry desiccate course in it's operation, and has by it's abuse been productive of fatal effects; it therefore not improperly claims a place in this essay.

Such has been it's astonishing effects in the hands of some ignorant and rash persons; that their success with it has been a reproach to surgeons of distinguished ability and character; of which I shall here mention a few instances.

One John Brown a taylor of Evesham, a youth of about eighteen years old, was afflicted with scrophulous ulcers in several places, but particularly with one among the small bones of his right foot, the whole of which had a very livid appearance, and the leg was greatly emaciated; every thing that could be thought of for his relief by surgeons after surgery, was successively tried at different times for ten years together, but without any benefit; the discharge from the foot was so very abundant, fetid, and offensive to the smell, it was looked upon as certain that he would soon become bedridden to prevent which, as his pulse was still good, amputation was proposed, and the day fixed upon for it's performance; on the report whereof Mrs. Davies the wife of a neighbouring shoemaker, officiously went to the house, and told the lad's mother; that if she would follow her advice, she would answer with her

her

her life, for the cure of her son and the preservation of his leg; from the desire of which she embraced the offer, and the following means were entered upon the very next day. She got a quantity of the fresh leaves of foxglove, had them beat well in a marble mortar and the juice expressed out, of this she gave a table spoonful in half a pint of warm beer, and the leaves only from which the juice was taken, she applied to the ulcers; the lad vomited very violently, and at very short intervals continued so to do for near four hours; when it took the contrary turn, he purged him briskly for the remainder of the day, the purging then stopped, and his tongue and gums growing sore, till mouth ran water for three days successively, as though he had been bit with a dog. The applications to the ulcers were daily renewed, by which after the first twenty four hours they were freed from pain; their sanious discharge considerably lessened, & very soon after ceased, their dead smell went off, and their colour became perfectly fixed. His complexion visibly mended, and he in every respect daily gained health and strength. Fourteen days after the first dose, he repeated it in the same dose and manner, when it operated as the former had done; and thereby in less than another month, without repeating the medicine any more, he

was perfectly cured, and has ever since remained well, though it is now two years since the experiment was made.

Sarah Hay of the same town, a young woman of about twenty eight years of age, afflicted with a scrophulous affec<sup>t</sup> in one eye which nearly deprived her of sight, two large cists in her upper lip which was of four times it's natural size; globous tumors on the joints of her fingers, and an almost constant pain in her limbs; for which she had used the colored sponge,undry macerated, millepertuis, lime water, and a decoction of the woods, without any material benefit; was prevailed upon by the same woman, to take a table spoonful of the hogwren juice, in the manner it was given in the last described case, and which in a short time, greatly mitigated all her symptoms; but it's operation was so violent that she could not be prevailed upon to take it again, though she was as much urged to it as possible, and there was reason to expect if she did, that it would have complicated her cure.

Mr. Thomas Mafon another person of Evesham, had a scrophulous tumor of a very livid colour on his right elbow, in which the end of the humerus, was much enlarged; from the

gain in which for about three years he had been tortured more or less incessantly; he had tried for his relief an infinity of the most approved medicines, but to no purpose; yet by four doses only of this juice at a months distance between each, he was perfectly cured without ever relapsing into the same disorder, though the joint never contracted itself to it's proper size, but remained somewhat more enlarged than natural.

So well received was this juice in the case of scrophulous complaints, from the use that had been made with it in such cases by the themselves wife; that it became a common thing for the school doctors in the town of Exeter, to administer it indiscriminately to the young children under their care, who had the least tincture of that disorder; until one Sarah Barker, a child of eight years old, taking an over dose of it, for a complaint she had in her eyes; died in it's operation, and put a stop to the practice.

These several particulars, I communicated to my worthy friends, the physician and the surgeons of the Worcester infirmary; in which were many patients afflicted with scrophulous complaints, that had resisted the force of the best known means for their cure; but these gentlemen conceiving the operation of this



medicine, to depend on a caustic alkaline salt that was necessary to be corrected; instead of giving the juice in the simple manner before mentioned, in which it had been saccharified; cautiously gave only a simple infusion of the leaves, with the fixed vegetable acid, extract of mastic; and even that in such small quantities, as were sufficient to excite a gentle sleep, without either purging or vomiting; and in that manner finding it to do no good, they desisted from it's further trial, as a medicine of too drastic a nature to be taken internally; though from it's external use in ointments and cataplasms, they had experienced it's great good effects in many instances.

I now come to the virtues of the henlock, which is the most important of all the lecherous tribe of vegetables, that has been introduced into practice for a febrile medicine; I have reserved for the closing subject of this essay. This plant is described by botanists, under the name of the *sternus asper vulgaris*, or, the greater common henlock; until of late years, except by some daring ignorant people, it was only topically applied; but we have now an extract prepared of it's expressed juice, strongly recommended to be internally taken, by that zealous aspirant into medicine, Dr. Storck physician at Vienna; who prescribes it, as a

specific in several of those disorders which have been looked upon as incurable; particularly in erysipelas, febricula, quinsy, strumous indurations of the glands, and all conditioned ulcers; in all which, he has related his success with it in so candid and open a manner, as cannot fail to enforce belief; although the instances he has given us of it's effects, are truly astonishing; but lest his record of these facts should alone be insufficient, to overcome prevailing propensities against the use of this medicine; he has joined to it the prevailing influence of Baron Van Swieten's approval, by telling us, that under his inspection, most of the instances he has given us were made, and if we consider the conspicuous light in which that gentleman deservedly stands in the physical world; we cannot but look upon any publications against the use of a medicine, which has proved beneficial by experience, and is recommended by him; to arise from it's failure, through want of accuracy in it's preparation, or skill in it's use; it being certain, that a person so eminent in his profession would never attempt to impose falsehoods on the world, by supporting them as truths, at the expense of his honour, and without having the least prospect of advantage for the hazard; it would be doing violence to a man's sense

so believe it's possibility. Confident therefore, that the published effects of this medicine, were such as might be relied upon; I determined to give it a fair trial, in all such cases as might offer to my care, which were similar to those, in which Dr. Serré had successfully given it; and the cases I tried it in were the following.

Mary Thomas, of Camden in Gloucestershire, applied to me for advice in the twenty eighth year of her age; when upon examination I found, that from her fourteenth year she had had the benefit of nature regularly, but that from her being ten years old she had been more or less subject to epileptic fits, and that in her eighteenth year she had perceived an hard indolent tumour, of the size of a nut in her left breast; which in six months time increased to the size of a pigeon's egg, was unequal in figure, &c. painful when touched; whence she had the greatest dread of it's becoming cancerous, her grandmother having died of a distase in her throat, which was judged to be of that nature; under these circumstances I had but little hopes of affording her relief, but thinking it a very proper case to try the extract of haddock, I immediately prescribed it to her; and began at first, by giving it to her three times a day, in the quantity of two grains only for a dose,

for which, I gradually increased to twelve grains; so that at last she took thirty six grains of it every day constantly, and continued it without interruption in that quantity, from the month of May, to the beginning of January following, but without any perceptible diminution of the tumour; though it totally removed the pain she had in it, and what was most remarkable; from the time she had taken it two months, she had no return of any symptom of the epileptic kind.

Anne Stacey of Bath aged thirty six, a very corpulent woman, much disposed to the drinking of spirituous liquors, was afflicted with a cancer from a blow upon her right breast, which she submitted to have excised; and which was very skillfully performed and well healed, within the space of ten weeks from the operation. But about two years since, she began to complain with violent wandering pains in her head, and a frequent burning heat in different parts of her body; after the continuance of which for about three months, she was suddenly stricken with a fever, which continued to increase upon her for four days without intermission; when she perceived an unrefreshing swelling her left arm, that gradually grew more and more troublesome, so as to require a slack disposition; by which there was

found a very small tumour, of an irregular figure, which she could not bear to have touched; this tumour in a very few days became perceptibly larger, and all her other complaints diminished, as that augmented; in about two months it had a livid colour, with every other appearance that could make it threatening; in this deplorable situation, almost without hope, I put her upon the use of the extract of henlock, of which I at first gave her three grains every four hours, which dose by little and little was enlarged to twelve grains, and so continued for eight months successively; during all which time, she wore upon the part a small quilt made with linen and cotton, and kept constantly moist, with a mixture made with two ounces of the extract of henlock, diffused in sixteen ounces of Myrtolera's spirit; by which though the tumour was not removed, it was kept from increasing, and she was freed from her pains; so that she has since had two years tolerable health, without one alarming symptom to awaken her fears; though she has not always regarded the instruction laid upon her, of abstaining from her accustomed condiments, which is alone, a sufficient cause to aggravate such a complaint in most constitutions.

Mary Adams, of Broadway in the County of Worcester, aged twenty two years, for some time

she had felt a hard indolent tumour, under the nipple of her left breast, which was unusually large without being painful, but in a few months after it's first appearance, becoming irregular in her mamma, she had frequent drawings in it that were excessively troublesome; the nipple gradually contracted itself, and was almost sunk into the breast. By one or two of the surgeons that saw it, it was declared to be cancerous; they therefore treated her with a gentle mercurial once a week, and gave her a light preparation of black hellebore with opium, on the intermediate days; which soon reduced her to the regular benefit of nature, but without any material relief to the disorder of her breast; on which account she was put upon a course of colored sponge with zinc and the bark; the exhibition of saltpetre, antimonial preparations, and every other means commonly used for cancerous complaints, but without any advantage; yet by a constant perseverance for six months, in the use of ten grains of the extract of hemlock three times a day, and the application of a cloth wet in a solution of it, in Mydecrum's spirit, externally; she was perfectly cured & remains well to this day.

— William Court a lusty strong labouring young man, had several large indurated glands

under his chin, which were of long standing, and at times had ulcerated in different places, for which every thing that could be thought of by those that attended him, had been unsuccessfully tried, but not giving up all hope; he communicated his complaints to me; when I immediately put him upon a course of the beefsteak, of which he took the extract internally in the quantity of two drops a day, and had a cataplasim of the leaves externally applied; in which he persisted for full seven months, at the end whereof he was perfectly recovered, and remains well to this day.

Mrs. Anne Horns a gentlewoman of thirty five years of age, of a very spare thin habit, and of irregular menstruation; was gradually attacked with a dimness of sight, without any visible defect in her eyes; besides which she had frequent darting pains in the uterus and an almost constant flow of alba, with a great tension and swelling in her belly; of all which symptoms, by the use of a bark impregnated with the virtues of this plant, and eight grains of it's extract taken three times a day for two months, she got quite free, except of the defect in her eyes; and which, though it was not cured was greatly diminished, and would most probably have totally left her in another month or two, if she

could have been prevailed upon to have perfilled in the remedies, but which was impossible from the great repugnancy she had conceived to medicine, by having taken it so long.

Mrs. Jones a delicate young woman of the parish of Deanevich in Warrcestershire, had been for several months afflicted with a swelling in her knee, which in a manner destroyed the motion of the joint, and was of a very livid colour; in which state it continued without amendment from any thing that was tried till it opened of itself, in five or six different places, and was excessively painful; yet by the extract of henlock internally taken, in the quantity of seven grains for a dose three times a day; and a warm bath prepared of the same plant, applied to the affected limb for half an hour morning and night, she was perfectly cured, and remains in good health to this hour, though it is now five years since her recovery.

Thomas Torrie a lusty young shoemaker, subject to a number of hard glands under his chin, some of which were greatly enlarged, and some abscessed, from whence flowed a great discharge of thin water; was also troubled with great pain in all his limbs, and had a large number of scorbutic eruptions all



over his body for the cure of which he applied to me, who put him upon the use of the extract of hemlock, which he took in a full dose, and for five months together, without lessening the disorder under his chin, or his eruptions; though it perfectly freed him from the pain in his limbs.

Mr. Thomas Winfield a young gentleman of a very tall thin straight habit, in the eighteenth year of his age, was accidentally kicked by a horse on his left testicle, which by bleeding, purging, and cataplasms freely used, was so relieved; as to leave only a local hardness at one end of it, on the part called the epididymis, to which he paid no sort of regard for six years; but being then attacked with a fever, it became in a few days very painful, extended greatly in size, and at last formed several little fistulous openings, through its coverings, from whence for full three months, there issued a great discharge of a very ichorous nature; without materially lessening the size of the tumor, or the pain that attended it. In this case as he was a person of confidence, many physicians and surgeons were consulted, and consequently all possible means tried for his cure; but from none of them did he find the least help, until I advised him to the use of the extract of hemlock, of which

divided into three parts, he took a'thropia a day; and had a fomentation and cataplasim of it applied to the part, and thereby in the space of ten weeks without any other help, he regained perfect health.

In all these cases the medicine had its play, no other remedy being given during it's use but occasionally a dose of opium, lenitive electuary, or an absterge pill, if a too long constipation of the belly rendered them necessary; whence it cannot be questioned, but that the benefits which followed it's use in these several instances, were undubitably the effects of the medicine, and of that alone.

The great relief which many persons have experienced from this medicine in mitigating severe pain, have induced some to try it in the gout, and I have been assured by one gentleman who was greatly tortured with that disease, and had nearly lost the use of his limbs by it, that he ventured upon it's use, from the hopes that if it did not cure him, it would relieve him from his torture by an easy death; he began therefore boldly, and took ten grains of the extract for his first dose; in which quantity he repeated it twice a day for a month, when finding himself better, he took it three times a day for another month, and then increased the dose to fifteen grains, and so

continued it for eleven months; growing gradually better all the time, and at the end of it being perfectly free from pain; he therefore began to leave it off by the first slow degrees as he had entered upon it; and has now passed two years without either taking the medicine, or feeling any return of his disorder.

Besides this last case, which is here related upon the credit of a friend, two or three other instances have arose within the course of my own experience, of violent wandering pains locked upon to be gouty entirely ceasing; while this event, with a decoction of madder and other specious costs were administered for the cure of some schirrous tumours on which they had no effect; but as the several patients to whom this happened were all females, and troubled at the same time with uterine obstructions which went off before their gouty pains I ascribed their curation, to a return of their benefits of nature, more than to the specific quality of the extract, and for that reason omit their particular description in this essay.

It is not only in the cases here published in which I have with success given this medicine, for I have often with equal advantage prescribed in many others similar to these; yet I must acknowledge that it has much oftener failed than procured me the wished for

effects; many of the afflicted having been obliged to leave it off, from the violent heat, swelling, giddiness and dizziness of sight it occasioned; though not one of them all, whom it so affected, had the least lasting injury from it's use; and I must also observe, that in many patients to whom I have given it for local complaint, who could not bear with it internally, I have with the greatest success applied it externally; and also that of those to whom I have habitually prescribed it, I do not know an individual that has been since cured of his disorder, by any other means. And from these considerations though it be certain that the use of these kind of remedies are attended with some degree of danger; now we know that they have salutary effects in certain diseases, in which no other medicines avail, it is indisputably our duty to have recourse to them in all such disorders; that while there is a sufficient force of nature remaining to co-operate with them, we may not lose their benefits; yet their utility in such cases, can afford no pretence for calling them to our assistance where less hazardous means are found to be effectual; nor can it justify those who are not bound to the healing art, and thereby ought to foresee and anticipate the dangers which may arise from their misapplication, to meddle with

them; as in their hands, if they do good it can be only by chance; and if a contrary effect follows, it is but what ought to be expected and must be absolutely inevitable. When therefore evil events arise from the use of these medicines, let us always inquire if they act not the consequence of their misapplication before we condemn the remedies lest the discredit be imputed thereto, which is the result only of the ignorance of the prescriber; and in all those instances in which we find they have done good from a judicious use, let us also from the same spirit of justice strike the blemish which arise from them, to their full recommendation; who being happy in their discovery, has unreservedly communicated them to the world, from a disposition of humanity, and for the public good.

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AN  
E S S A Y  
ON  
DR. JURIN'S AND CHITTICK'S  
LITHONTRIPTICS,  
SHEWING  
THE NATURE AND ACTION,  
*of*  
ALKALINE LIXIVIUMS  
ON STONY CONCRETIONS FROM THE URINE  
IN THE KIDNEYS AND BLADDER;  
WITH THE BEST METHOD FOR THEIR  
PREPARATION.



*On Dr. Ferri's and Clinick's Lithontripes  
showing the nature and action of alkaline  
lixivians on stony concretions &c.*

*Genua curat lapidem non vi sed sapit calendo;*

**T**he natural rather than rational dread of the knife, so calculous patients; has hitherto kept the ingenuous body in the dench for an effectual lithontripe; and from the immense degree of hardness, with which stony concretions are formed in the animal body, their solvents have been sought for from the most coercive of menstrua. Hence, on the assertion of any medicine having adequate force, to break the cohesion between the particles of such concretions; another question has naturally arise, relative to the safety of such medicines when internally administered, from which question, as to the use of alkaline Lixivians the following examination & remarks have been produced; with an intent only to satisfy the mind of the inquirer, without any thought of their being offered to the public: But as various instances of benefit from the use of the Lixivium, has proved it a medicine of real efficacy; that no one may be dissuaded from it's trial by an account of any mischief which



have been ascribed to it, by those who have taken it improperly; the following pages are published, in hopes of exciting a more able hand, to carry the facts they contain by demonstrative experiments, into evident proof; or by the like means, manifest that they are groundless and without foundation.

Alkaline salts and lime water, have been both many years used to dissolve calculous concretions in the kidneys and bladder; and although both have been found to make great steps towards it, neither of them alone have proved sufficiently efficacious to complete the work; from hence, and it's having been observed, that by the external use of these salts and lime, when united together, effects were produced which neither of them could perform when separately employed; physicians were naturally led to the trial of common strong soap lye, well knowing soap lye to be a combination of the vegetable alkaline salt and quick lime; made by washing out the deleterious part of Russian potashes and fresh burnt lime mixed together in equal proportions, until the water employed therein is so saturated therewith, as to have exactly one pint of it will measure, be just sixteen ounces avoirdupois in weight.

The lye thus, or washings thus prepared, distinguished by the name of capital soap lye;

is sold by Lytlebury and Langly, Apothecary in Broad Street London, under the name of Dr. Jaria's Lithonergic; and is with uncommon secrecy administered as a secret by Mr. Christie, who of late years no one with the possession of his medicines, till he himself has mixed it with the liquor in which it is to be taken.

A pint bottle of this capital soap loss, bought of Mr. Langly, under the name of Dr. Jaria's Elixium for the stone, being well mixed by shaking I took exactly one ounce of it by avoirdupois weight, and subjected it to filtration through thin paper; the clear liquor that passed the filter I then mixed with syrup of violets, and it thereby became of a strong deep green colour, to this green liquor, I added by flow degrees a sufficient quantity of spirit of vitriol, to restore to the mixture the natural blue colour of the violet, which was not obtained until two hundred and fifty grains of it in weight had been added thereto; since which on the addition of more acid, which I made to it drop by drop, stirring it as it was added; no further intestine motion or effervescence was produced, and the mixture began to acquire a red or rather crimson complexion; hence I was convinced that all the alkaline salt this filtered Elixium then contained, was by the vitriolic acid perfectly neu-

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mailed. My next purpose was to discover the exact quantity of alkaline salt which had been thus contained, and which was contained in this ounce of Dr. Ferri's medicine.

For this purpose, I exactly weighed twenty grains of pure fixed alkaline salt, and dissolved it in a wine glass with one ounce of distilled rain water; I then added thereto drop by drop of the same spirit of vitriol, with which I had made the above experiment, until the alkaline salt dissolved in it, was thereby perfectly neutralised, which was manifested by its not effervescing with the further addition of spirit, or altering the natural colour of the violet by the addition of more tincture to the mixture; and this point of saturation of the alkali was obtained by exactly seventy grains in weight of the acid, whence it is manifest, that as twenty grains of alkaline salt, took in this experiment seventy grains of acid to neutralise it; and as the filtered liquor from an ounce of Iodivium, took two hundred and fifty grains of acid, to neutralise that in like manner, there must be dissolved in every ounce of this Iodivium seventy two grains of alkaline salt, and of course in every pint of it two ounces three drachms & twelve grains.

Being thus ascertained of the exact proportion of alkaline salt contained in a given

quantity of this Lixivium, which has by experience been proved not only safe, but also effectual; I looked upon it of essential consequence, in the next place to be considered, whether this quantity of alkaline salt, which I found in it; was as much as water would suspend in perfect solution; or a particular quantity only, intentionally dissolved therein, by means whereof, it was enabled to answer those purposes for which it is now recommended. To be furnished of this salt, I took two drachms of distilled rain water, and added to it by degrees of the same pure fixed alkaline salt, as long as the water manifested any solvent power thereon, by which I found, that the two drachms of water even unassisted with heat; was able perfectly to dissolve twenty five grains of the salt, and it is certain that by the help of heat it will dissolve much more; but without further test, it is hence evident, that an alkaline Lixivium may be made above four times as strong, as what is now sold for medicinal use. Let us hence judge, what must be thought of those practitioners, who instead of this approved remedy; recommend to be taken in the same quantity, as strong a Lixivium as can possibly be prepared; when this which is now used, the strength whereof may easily be above four times augmented; is by

too long a continuance, by too large doses, or by being taken in an improper vehicle; capable alone of producing the worst of mischiefs.

The filtered liquor being thus investigated, and a residuum of a more fixed nature which with the water and salts would not pass the pores of the paper, being left thereon, the paper to prevent any waste of the residuum, was perfectly dried with it; and was then found to be heavier grains heavier than it was before it was used as a filter; I then rubbed this paper and separated from it rather more than twelve grains of a very fine powder, not perfectly white, but of an ochre colour; somewhat approaching in appearance the mild, or common caustic of the shops.

This powder very soon attracted the moisture of the air, and thereby manifested itself to be partly saline; and not merely a fixed lime or calcareous earth, as might reasonably have been imagined. I therefore submitted this powder to farther examination, by adding to it an ounce of distilled rain water, which after standing an hour, I decanted from what it had precipitated, and added a like quantity of fresh distilled water to the remainder. This solution I repeated a second third and fourth time; after which, I put all the several washings together with the remaining residue into the same glass

glass and poured from it all that did not precipitate upon four hours standing. The waters of these washings were of a saline alkaline taste, and after resting a whole night contained a milkiness, which yielded no precipitation; but by the addition of a few drops of the acid of vitriol, generated innumerable small air bubbles, which adhered to the bottom and sides of the glass; the milkiness gradually disappeared and it became perfectly transparent. The precipitate, from which this milky liquor was decanted after standing four hours, being dried, weighed exactly nine grains; which is four grains less, than the salt trisulphur left upon the paper through which it was filtered; and which four grains is what gave the above observed milkiness to the several washings; hence it appears, that these four grains if not perfectly soluble as themselves, are nevertheless somewhat of a saline nature; and though not dissoluble in the small quantity of water used in the experiment, are nevertheless of so light a nature as to be perfectly soluble in pure distilled water, without fohdling at all, and it is not improbable if it be earth, but that it may have become so light by means of it's union with so large a proportion of the fixed alkaline salt as is contained in the medicine; it being cer-

min, that fixed alkaline min have a different power on many species of absorbent earth. Of this light calcareous insoluble matter, whether it be earth or salt, as four grains is obtainable from one ounce of the Indivium, forty four grains must be contained in every pint.

We now come to examine these nine grains of fixed absorbent earth, which remained perfectly indissoluble, and were precipitated from their several solutions. This earth, of which one ounce of the Indivium afforded nine grains, and which exists therein in the proportion of one hundred and fifty one grains to a pint, was found upon experiment, to dissolve very readily in distilled vinegar, and any acid acid, but by it's union with the vitriolic acid, formed a saline, thereby demonstrating that it is of a very different nature to that very light earth, which was separated by the repeated washings, of what remained in the paper upon first filtering the Indivium; as the vitriolic acid perfectly dissolved that, and rendered this quite indissoluble.

From these experiments and events; nothing can be more evident, than that by the union of three drachms & fifteen grains of a light calcareous earth; two ounces three

drachms and twelve grains of a fixed alkaline salt, and thirteen ounces thirty one grains of pure water, one pint or sixteen parcels of this liquor is prepared. Every moderate fixed tea spoonful of which, weighs one scruple, or the twenty fourth part of an ounce; twice which quantity, is the dose prescribed to be taken of it two or three times a day, while the continuance of the disease requires it's use.

But it must be observed, that when Dr. Ferri gave this medicine; he exhibited it more freely, and in tea or some other thin liquor, in which manner it frequently offends the stomach; whereas by never giving it in a larger quantity than two scruples at a time, and always mixing it in some soft mucilaginous liquor as real beech, which has been the sale with Mr. Chirick; that inconvenience is perfectly prevented.

If we have a retrospect to what has preceded, it is plain that two tea spoonfuls of it in measure, or two scruples of it in weight, contains only six grains of alkaline salt, and one grain & an half of calcareous earth; one third of which only, is in a manner dissoluble by it's union with the salt, and the other two thirds of it perfectly inert.



But granting, what some have imagined, that the whole grain and an half instead of being calcareous earth, is an oilful lime; if we consider that it is not given dry, but after it has been kept some time steeped in water; we may be sure that it is impossible it should act as lime, or produce any different effects, to what any other simple absorbent earth would be capable of producing, even if it had never been calcined; and if we consider, how often in a day, a much larger dose than six grains of pure alkaline salt has without the least injury been repeatedly given, for days together in dropsical and other complaints; we shall find very little or no reason to condemn the use of soap lees, which is injurious only, like all other powerful medicines when improperly administered. And it is unjust, to look upon that as the property of a remedy, which is the result of it's abuse only.

Having by the decomposition of this medicine not only discovered it's constituent parts, but also their respective proportions one to the other; we are thereby taught, how the same compound may be again made, and perhaps with some degree of improvement; as it is certain, that the ashes of different vegetables, and the lime of different stones, which are now used as it's preparation; will ever afford

more or less salt, and be more or less dissoluble in water; according to the manner of their being burnt into ashes or lime, and to the nature of the plants or stones from which they were severally prepared; whence the strength and effects of the Lixivium made with them, must be still variable.

To guard therefore against such uncertainty in the power of this remedy, is of no small consequence, and if instead of ashes and common lime, a pure alkaline salt prepared from common ashes or tartar, and a lixiv made from the shells of oysters be employed in it's preparation, it will be effectually done, for it is scarce possible that the medicines so made, should at different makings be more or less powerful, or differ materially in any respect; therefore the following process seems preferable to any other, for the preparation of it.

Take of pure fixed alkaline salt, made by evaporating to dryness a Lixivium, either of potashes, or of the ashes of hemp, or like weeds; all which are sold by the dry salters in London, under the different names of Russian ashes, of hells, or soda, or of the alkaline salt made by the calcination of nitre and tartar, commonly called salt of tartar; as may be most easily had, two ounces and one half; Of

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cyther shells fresh calcined into a perfect lime, and grossly powdered one pound, let them be well mixed together, and calcined again in a large crucible, covered on the top with a common tile, until the mixture be red hot in a clear charcoal fire; then let it cool, and reduce the mass it affords in a marble mortar to a gross powder; the whole of which put into a filter over a large earthen pan, and pour upon it two quarts of boiling water, and when that is passed, as it runs in the filter add to it more boiling water, by a pint at a time until the filtered liquor in the whole be exactly one pint wine measure, and in weight fifteen ounces; evaporating it away if that weight exceeds that measure.

This liquor so prepared will by every marking be equally strong, and by every experiment prove itself the identical first medicine, which is now sold as a secret; excepting only, that it will be clear and transparent, whereas that sold as a secret, is white and turbid from the proportion of absorbent earth, which remains in it, and which being incapable of passing through the filter, is likewise incapable of passing the circulation & going to the kidneys, so as to affect any stone, lodged either in them or in the bladder, and null of consequence be entirely use-

ice. The solution, therefore when thus made free from any inert earth, is a medicine most elegant; if in no other respects preferable to the verdigris solution. But as the world is more apt to judge from appearances, than reality, and some may better approve the remedy when it is the same to the eye, as that verdigris by the verdigris name; for their satisfaction, I will observe, that if a quart of boiling water, be poured on the earth remaining in the filter, the whole then stirred together and suffered to stand a few minutes for the grosser parts to subside; and the supernatant liquor, which for some time will remain milky, be decanted from the residue, into a narrow-bottomed vessel, there will be afforded a sediment that may be dried upon a shallow dish, of which if three drachms & fifteen grains be added to a pint wine measure, or sixteen ounces in weight of the filtered liquor before distilled; a medicine will be constituted exactly the same, as well in appearance as in effects, with the much celebrated lythion-triptic of Dr. Ferri and Mr. Christ.

In this medicine by the union of two alkalis; as in the aqua regia, by the union of two acids; we have a new solvent, capable of yielding effects in solution, which neither of its constituent principles separately used, could

product; and as the constituent principles of *aqua regia*, by their union together, not only acquire powers they had not before their mixture, but loose powers they had in their separate state; it is probable that the constituent principles of this solvent do the same. It is therefore worthy of the ingenious to subject such articles to its power, which have hitherto proved indissoluble; for it is past all doubt, that of solvents and their powers; nothing can with certainty be said, but what has been proved to be so, by experiment. We have already had some instances of this medicine having dissolved stones generated in the kidneys and bladder; and chalk stones which settle in the goat, are similar in nature with them, though in some degree softer; may it not therefore as it dissolves the one, dissolve the other also? From the same principles may it not likewise destroy, that viscosity which causes the archyphols or stiff joint, in many of which a gritty matter of a chalky nature is found? Will it not in some degree restore fluidity to the white of an egg when hardened by hot water? or attenuate and correct those stagnations of lymph, which constitute the scrophula? Experience only can determine

serene diet, & such like matters; and experiments made on certain substances, under certain circumstances; may afford sufficient proofs to warrant it's trial, in these and other similar complaints; by which it is not certain, but that judicious and skilful physicians may be enabled to surmount some of those difficulties, which are now the agonies *Medicorum & Chirurgorum*. The hopes of which is so very probable as to render it the duty of practitioners, to subject such matters to the test, and to persevere in making experiments, till these desiderata are obtained; carefully regarding to make such experiments only, as can not endanger the ease or safety of their fellow creatures. Yet it must be confessed, that although theory may sometimes give light, and lead impetual adepts, to the discovery of new methods of cure in most obstinate complaints; yet if those who are not well versed in observation from experience, suffer themselves to be guided by theory alone, they will be very liable to do mischief, by their attempts to do good; for if the theory they proceed upon be erroneous, the practice founded thereon cannot be otherwise, except by accident and consequently the events from it must be inevitably injurious; whereas on the contrary, if practice be

made the foundation of theory; the same practice, will in similar cases, afford similar events, and if we are only wrong in theoretically accounting for the causes of events, without founding our practice upon such reasonings, no evil can thence arise.

Regardless of this observation, it is the general practice of the present age, when any new hypothesis is offered to the world, after trying down the facts, to attempt it's proof by a relation of a number of facts, perhaps made for it's support; instead of first establishing the facts on which it is founded by a number of events, and afterwards accounting for them with proper reasons; as should ever to be the rule with physical writers. It is on this plan, after having had many instances of cures in calculus cases performed by the fluidum prepared as it is prescribed by Dr. Stern, and taken as directed by Mr. Cistek, and after having demonstrated what are the articles, and their proportions, of which it consists, that I now take into consideration what is the nature of the stone; and attempt to explain by what means it acts, thence to as to render it unable by destroying the cohesion of it's particles.

Calculus concretions in the kidneys or bladder, constantly arise from some particle of

matter accidentally lodged therein; and very frequently, from a drop of grumous extravasated blood, to the surface of which the earthy parts of the urine adhere; and by accumulating soon form a crust, or shell on its external surface; upon which, again in like manner by degrees other crusts or shells are formed; until by the close embrace of one upon another, the stone has acquired it's full size; which happens sooner or later according to the purity or impurity of the liquors drunk, the matter for it's increase being afforded by them; for it is in consequence of our common liquors abounding with earthy particles, and of the readiness of those liquors to part with those particles; which depends also, on their greater or less solubility in their own nature, and on the attractive power of the stone that is increasing, to accumulate them to itself, as well as on the solvent power of the liquors from which our urine is prepared; that stones are generated in the urinary passages. As a proof of this, there are few stones extracted from the urinary parts, which have not a small cavity in their very center; and which, do not when broke shew their whole substance to be formed like an onion; by means of one stratum or stony shell, closely connected upon

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another; & which several stones or shells, as they have gradually and successively been formed; are found not only to be of different colours but also of different degrees of hardness, one from the other, according to the nature of the matter with which, at different times their growth has been supplied, which is owing only to the different form of earth, dissolved in the several waters; with which the common beverage of the dissolved, at different times, and in different places, has been prepared, or from some other such like accidental cause.

The solidity of these concretions, seems to depend upon an oily matter, which acts as a cement and holds them together, and this oily matter they attract from the urine, which is a very mixed compound, and the washings of the blood itself. It is constantly received into our blood from our kidneys, and washed out of it by the urine; where being inhibited by it's earthy particles, they are rendered insoluble or indissoluble in water, & coalesce together; on the other hand, the separation again of these particles one from the other, which is the solution of the Stone, depends, on the impregnation of the urine with a principle, to which the oily matter has

a stronger affinity, than it has with the earthy matter that constitutes the stone. Of this, the human calculus being gradually decomposed by the action of alkaline salts, is a strong evidence; for who is there with the least degree of chemical knowledge, but will know, that alkaline salts, more strongly than acidulous earths, attend and unite with all oily substances, and that oils, by their union with alkaline salts, lose the characteristic quality of oils, and acquire quite contrary properties to their own nature; such as that of being miscible with water; of uniting with and separating the particles of starchy concretions viscid substances, and losing all power of inflammability. Being convinced of this, we cannot wonder how it is, that the strong solution of soap dissolves the stone, nor can we want a reason, why these salts united with oils and converted into soaps, which is the constant result of their union, in proportion as they keep so united, lose their dissolvent powers upon starchy concretions. The same reason, demonstrates likewise when calculus concretions are removed by full doses of the liquor, how it is, that by impregnating the urine with alkaline salts, the oily parts of the urine are engaged thereby and the accumulation

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of any earthy substance than it into a collected body, is as to form a stone, must be prevented; even though it be not changed the-  
 rewith to that degree, as would enable it to  
 dissolve such concretions previously formed.  
 From these considerations relative to the na-  
 ture of the stone and it's solution, and a full  
 conviction from facts of the power of the Li-  
 quor; I will now proceed to lay down a method  
 founded thereon, by the observance of which,  
 the disease when perfect may most probably  
 be cured; and also, how it may best be pre-  
 vented, in bodies which have a tendency to it;  
 together with the most easy and effectual means  
 for the relief of it's concomitant symptoms.

For the radical cure of a stone when for-  
 med, whether it be in the kidneys or bladder;  
 the alkaline solution which experience has shewn  
 to be best effectual, and safe, should be ex-  
 hibited in such a quantity; as to impregnate  
 all the liquids we drink, with it's properties;  
 in that degree which is necessary to enable  
 them, when they reach the seat of the disease,  
 to erode, and unite with the oily or concre-  
 ting principle of the stoney matter; with  
 which it has a stronger affinity, than with the  
 substance with that constitutes the stone. For  
 by means of the oily matter, being attracted

from the external surface of the stone, by the alkaline salt dissolved in the urine, it is, that the acrid particles with which it comes in contact, are naturally forced to acquit & disengage themselves from each other, so as to be easily washed off from the stone, by the urine in its passage; and in like manner, by a continuance of the same course, the whole substance is gradually consumed; and not in consequence of the urine being made so acid, as by its acrimony to corrode and waste its substance, to which opinion the generality of the world have subscribed, though if that was the case, it is certain that the very bladder itself would be first destroyed, from the known power of alkaline salts on animal substance. To give the urine this attractive power, it is necessary to take the lixivium, from one to two tea spoons for a dose, and to repeat it in that quantity twice or three times in the day, as long as occasion may require the urine to be therewith impregnated; and as the salt in the lixivium are of a very acrid pungent taste, it is also necessary, it should be taken in a mucilaginous fluid; from which, by simple dilution it can be again washed out, after it is passed through the stomach, without its being changed in its nature, and such a vehicle experience has pro-

ved real brook to be; which being in every ones power to taste and unexceptionable in it's own nature, cannot be changed for the better; however, as the sensibility of one stomach is greater than of another, it will be necessary to add a greater or less quantity of the brook to make it agree, with particular individuals; wherefore, although two tea spoonsfulls ought never to be taken in less than half a pint of the brook; yet it is certain that it may sometimes be advantageously mixed in twice the quantity, where it offends either the stomach or the tube without it, and the brook should always be most carefully tried till it's fit.

While this medicine is taking, the patient should upon no account use any thing that is acid or only if in his power to avoid it. His body should be exercised but little, and that gently, besides which that the course of the medicine should be determined to the kidneys & bladder, it is necessary the body should be kept cool, and thin clothed; and it may be also of consequence, that both night and day, a perfect horizontal posture should as much as possible be avoided.

While this medicine is in use, coliciveness is a symptom that frequently attends, and

to guard against it is very material; which may effectually be done by repeated doses of rhubarb and olive, mixed in equal quantities, and taken from ten to twenty grains, once in twenty four hours; or by a dose of lenitive electuary once in two or three days, as from the urgency of the symptom it may be necessary.

If as too frequently happens in cases of the stone great pain, strangury, tenderness, or bloody urine should come on; an emollient anodyne glyster, should be immediately administered, and occasionally repeated. But if any calculus happening to pass from the kidneys, should stop in either of the ureters; or having passed the ureters & bladder, should from its size or figure, stop in the urethra; an opiat should be taken in a full dose; and sweet oil, dissolved in the yolk of an egg, then diluted with barley water or milkew tea; together with soap either in a solid or liquid form, may be freely used at the same time; to the speedy operation of which, a frictionship of simple warm water will afford the greatest assistance; but before the use of these means in this distate, in case the alkaline medicine has not been long taken, it will be of the most consequence to open a vein;

though, under a constant use of that remedy, it is an operation will be better advised; the alkaline salts, being rather too attenuating in their own nature, to admit of a beneficial use of phlebotomy. All this holds equally true in regard to the case of the gravel, as of the stone; for as the alkaline lye does not destroy the stone, by means of it's corrosive power; but as was before observed, by attacking the oily or cementing principles from the urine with more force, than it is attracted by the absorbent earth; the same degree of saturation, is requisite to give urine that power upon a small, as upon a large calculus; though the necessity of keeping it so saturated, will be proportionably less permanent, in the case of the gravel; as the gravel is in fact, to that degree of the disease we call the stone.

But necessary as this method may be, to relieve those who have the stone; it's cure is a very different thing, to the prevention of a stone generating in those who have it not and who may be disposed to it; for the cure of it when formed, depends on medicines operating on the matter of the disease, which is the substance of the stone itself; whereas the prevention of it depends only on the operation of it on the solids & fluids of the body. Or in other words,

on a preservation of a proper state in the blood, or rather of the urine, which is the washing of the blood; and of the kidneys or organs destined by nature to its secretion and expulsion; if we consider this, it is evident how much the purity of the water from earthy terrigenous particles, with which our common drink is prepared ought to be regarded; it being an indispensable maxim, *quod non habet non dat*; the use therefore of the purest water is indispensably necessary to such as have gravel, for their common beverage; but thence advantageously may be added for the like, a small quantity of any ardent spirit, as brandy or rum; or if it be more eligible to the taste, a larger proportion of wine, provided it be of a kind not acid or loaded with tartar, but of a soft denurative nature; such as is the malaga, vulgarly called mountain, mosel and calcevalle.

While we are careful thus not to carry into the habit a load of fresh matter for a supply to the disease; and to preserve a due tone and vigor in the fibres, we should omit nothing that can keep the particular parts subject to the disease clear of sediments, a draught or two therefore of such clear water



as is above described, drunk in the open air early every morning, will be of great use for that purpose; as will also moderate exercise, and especially gentle riding on horseback or rowing, if it be used at the same time; but every forcing disease, ought to be carefully avoided; as they are generally weakening if not otherwise injurious to the kidneys. To preserve such as are healthy, from the commencement of this disease, the above rules will hardly fail; but in habits which have a propensity to grossness gravel or stony concretions, more may be necessary; for after freeing the constitution from any flat has been formed, to prevent the generation or growth of fresh ones, instead of pure water; water impregnated with the soluble part of lime, made by the calcination of oyster shells into lime, may be required; and if used will destroy all tendency in the urine to form concretions, as well as give strength to the kidneys, properly to perform their functions, and heal any injuries that any past paroxysms may have occasioned. If to take this lime water alone, be at all disagreeable; it may be mixed with milk, in the proportion of one third milk, to two thirds lime water; by which it's natural taste will be control'd, though perhaps not without losing dissipation of it's virtues.

It need not be used constantly, but continued only for eight or ten days once in a month in the quantity of a pint in a morning; and if any symptoms should happen to arise, from the removal of a stone previously formed; which might have lay dormant before even out of the urinary canal, and at that juncture might by some accident or other, have pained into it; so as to produce by it's figure or size inflammation & pain, with their consequences; it can be no evidence against the efficacy of this practice, as it is a circumstance, that might have equally arrived if this medicine had not been in use, I therefore mention it, only to prevent an imputed condemnation of the medicine, if the event should so unfortunately happen.

We have many instances in which the necessary means for the cure of one disease may be productive not only of the needed change for health in the diseased person; but also of such other alterations in the body, as may bring on, or constitute other disorders; I will therefore close this essay, with observing, that where the use of this medicine for the requisite time to cure the stone, may have attenuated the blood too much; a vegetable

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Beer, milk whey, solutions of oil in egg, libacid drinks, and the bark properly used, with the observance of a state of rest in a cool air, will soon effectually put a stop to it's ill consequences; the blood in that case being very similar to that of our sailors after close confinement in ships, and long lying on sea provisions, which is commonly called the sea fever; and which is constantly and quickly cured, on their arrival at land, and lying in a free and uncorrupted air; by a strict adherence to such a regimen.

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AN  
ESSAY  
ON THE  
DIFFICULTY  
OF  
DETERMINING,  
IF BODIES ARE POISONED,  
FROM THEIR INSPECTION AFTER DEATH;  
DEMONSTRATED IN THE CASE OF  
SARAH FIELD,



*On the difficulty, of ascertaining the effects of poison, from those of a mortal acrimony, in the animal fluids; demonstrated, in a narration of the case of one Sarah Field, who by a covetous inquest, was forced into debt, and ignominiously hurried on the public high road with a stake through her body; pursuant to the laws for the prevention of suicide.*

Sarah Field a poor girl about fifteen years old, was put out apprentice by the Parish of St. Laurence in Lynton in the County of Worcester, to one Charles George a Gardener in the same town, from whom, thinking herself ill treated, she on Monday the sixteenth of November 1748, forced means to escape, and on the Wednesday following was forcibly taken back to him by the parish officers; whereby she was thrown into a violent rage, which she with great difficulty, through fear, in some degree contained on her arrival at his house.

A few hours before she was taken from her father to whom she flew in her discontent, she eat a large slice of bread spread with dripping, or the fat which falls from meat

as it is coughing, and as soon as she came to her place, she was given by her mistress a dish of fat meat broth, of which she eat a part only, before she was so sick as to be forced to desist; the sickness produced a vomiting which was followed by a purging, by which she evacuated both upwards and downwards at short intervals, in that night and the next day a very large quantity of a green bitter humor.

She complained in a particular manner, of pain in her back and right side, of an universal coldness, an insupportable shuff and cramps in her legs; but the purging and vomiting wholly ceased on the Thursday evening, when she last stool she had was blackish and excessively watery.

Until the purging and vomiting began to diminish, she was exceeding coldish; but as those evacuations decreased, she became gradually more quiet, and all her other symptoms mitigated, so that she slept comfortably on the Thursday evening for some hours, but on the Friday morning her breath grew difficult, which by six creeping upon her all the day; caused a return of her coldness in the evening, and a most miserable night, which terminated in her death early on the Saturday morning.

During the whole of her illness no medicine was taken for her relief, but herself, of her own judgment supplied her with warm broth, bread boiled in beer, and tea; besides which she had nothing given her, but now and then a small quantity of an infusion of malt.

She was never observed to discharge blood, either upwards or downwards, was free from convulsions from first to last, retained her senses to the moment she expired, and having a few days before been sent by her mother to buy some arsenic for the poisoning of rats, she was frequently interrogated, if she had taken some of it herself; or, had used any other means of a similar nature for her destruction, which she as often, most abjectly and solemnly assured them she had not; though she frankly confessed that she had repeatedly thought of it, rather than to continue under the cruel treatment she received from the family she was in.

The next day she died, she was hurried into her coffin & taken to the church to be buried; but the minister suspecting from some whispers that had passed, relative to the purchase of the arsenic, and the ill treatment she had had, that she did not die a natural death; refused at that time to perform the ceremony, and ordered, that the corpse should be laid in



the church till the matter had been inquired into.

Soon after this, the report of these occurrences was brought to me whereupon I thought it my duty as a principal inhabitant and the only one of the faculty of physicians in the Parish, to be aiding as much as I could, in the discovery of the truth; that murder if any had been committed, might not go unpunished.

With this view I sent for the overseers of the poor, as the child was one under their care, that they might inform me of such circumstances of the affair as had then reached their knowledge; which they readily did, in the presence of two neighbouring surgeons; who thinking with me, that there was reason for the suspicion, severally offered the suggestion to open and inspect the body, without any expense to the Parish.

On which I went with the officers to a justice of the peace, that by him they might be properly directed, in what manner to proceed. By the justice they were ordered on the contrary, with whom the minister had been before to acquaint him of the affair. The officers on their return brought me that gentleman's compliments, and his assurance that he would meet me at the church, where the corps

showing, by nine the next morning; but at the same time, informed, that they thought it was his duty to settle the enquiry, and that they did not believe he would be there, as it was well known, that Grove was a peer in the interest of a member of Parliament, to whom the coroner was steward.

Whether or not their gentleman had reason for this suspicion, I will not take upon me to say; but shall leave to the opinion of the reader, after informing him, that a little before the hour appointed for the examination; I met another surgeon together with his apprentice as they were going to the church to open the body, but of which he said nothing to me, though I conversed with him on other matters, and though in affairs of this kind, the whole faculty ought always to be called; least private interest should influence the single inspector to make a false report, or any particular circumstance escape his eye; by which either the innocent may be confused or the guilty acquitted.

However, private as this business was designed to be conducted, a few minutes after we had parted, I was informed by one whom I had fixed on the watch, in consequence of the hint I had received from the officers; that the surgeon and his apprentice were then

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alone with the body, which they were actually opening; whereupon I called upon Mr. Savage as apothecary and took him with me to the church, where we came very opportunely; as the external segments were just dividing at the moment we entered, which we did not without evident disapprobation to the operating force; it being what he did not expect, having order'd the doors to be locked, to hinder any such admission; but as we were in the church, and the autopsy was begun, he was obliged to go on with it; least, by so manifest an attempt to conceal such facts as might be discoverable on the inspection of the body; his integrity or judgment should be uselessly questionable.

He began therefore with observing, as the external segments were not perfectly divided, that they were in some parts discoloured; though not in any extraordinary degree for the corpse of a person taken off by so sudden and violent an illness, and who had been dead so long.

He first laid open to our view the contents of both the thorax and abdomen, on which he remarked that the lungs were of a more livid hue, and fuller of blood than natural; but that they were neither mortified nor gangrened, or any

other way it changed as to be capable of producing death.

He then took the lungs with the adhesions out of the chest, and desired me and some others, who by this time were come into the church, to observe, that the thorax had in it a very large and uncommon quantity of coagulated blood and water, as indeed it had; but on my looking into the parts to see if no large blood vessel was divided, there was found a large incision into the cavity of the heart itself, and the coagulated blood which on death had flowed in its large vessels, together with the lymph (which is provided by nature in the pericardium, that the constant motion of the heart may not be hindered by any adhesion) had emptied themselves into the chest, and was the source of all the humours that were found in it; the quantity whereof was nothing extraordinary, to rest in the heart and pericardium after death.

When I made this remark, the surgeon asserted that he had not cut the pericardium though I showed him an incision made into the very substance of the heart; I therefore asked him which was the pericardium, on which he put his finger on the external membrane of the heart, on the side that was not cut, and

fold, that that was it; but observing it not loose and movable over the parts it contained, he confessed his mistake, and owned that it was remarkable to see the pericardium so firmly adhere to the heart.

Upon this, I pointed to a membrane that was loose, and asked him, if that was not a part of the pericardium, which after examining he told me was a portion of the diaphragm; whereupon I desired him to lift up the heart, which having done, I showed him more of the same, and told him, that the whole of it that was there would lap up the heart as in a bag, which upon trial he found; on the ocular demonstration whereof he was convinced of his mistake; and proceed to the examination of the parts contained in the cavity of the lower belly. Whereas the first thing he observed, was, that the bowels were in no part inflated or swollen, nor did the corpus purge or swell at all.

The convex side of the liver was paler than ordinary, & the concave side near where the gall bladder adhered, and the intestines (which in their natural situation touched the gall bladder) were more yellow, and of a deeper dye than is usual in an healthy state.

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The gall bladder was near as large as an egg, and contained in it a pretty large quantity of poisonous green bile.

The stomach was the next part that was subjected to examination, it was not at all distended with hæmorrh, nor obviously inflamed; though it had in it a dead worm, and about four ounces of a humour like that which is generally brought up in a bilious fever: The mucos of the stomach was not shraded, but it was tinged with the colour of the fluid it contained. It's villous coat was in no degree destroyed, nor was there any excoriation or ulceration to be found on any part of it: but there was a pretty large black spot between it's bottom and the pylorus, on the edge of which appeared a small inflammatory redness. This blackness, so firmly adhered to it's under membrane, that it could not be separated from it, and being penetrated with a knife was found to be no deeper than the osseous glanclous; but the surgeon thought that the stomach was somewhat thinner than ordinary, though not more so in one part than in another.

The whole alimentary tube appeared outwardly thin, and being opened with the knife from end to end proved free from inflammation, excoriation, ulcer and coagulated blood, but

it was so remarkably empty, that it had nothing in it but a dead worm or two, with a little mucus tinged with bile, of a somewhat deeper colour than usual; like that which was before described to have been in the stomach.

There was no extravasated hæmorrhage in the abdomen among the intestines, the nails were not discoloured, nor did the hair fall off. The kidneys were not examined while I and Mr. Savage were there, nor do I believe they were afterwards, for I had not left the church half an hour, before I met the surgeon apprentice in the street, who told me, that the body was then actually fired-up.

The inspection of the corpse being finished, the coroners inquest sat upon the body, to whom I first went, that I had been present at the opening of the corpse and was ready if desired, to inform them of what I had observed, and my opinion thereon: but they returned me for answer, that they had taken the evidence of the surgeon employed by the coroner and of the girls present; whereby they were sufficiently convinced, that the girl had poisoned herself, and should give it as their verdict, that she was *fiat de se*, without hearing what any other person had to say about it; and which they immediately after did, in consequence whereof she

was buried the same evening with a stake through her body in the public high-road, as by the law in such case directed.

Having now gone through the various circumstances and symptoms attending this case, from the time the girl was taken ill to the time she died, all which I had from people who took care of her in her illness; and having given also a particular account of the proceedings had therein, and of the depredations made by the disorder on the body from an ocular examination into it after death, it remains only to determine, if from these symptoms & these appearances, there is sufficient evidence to effect her death was, or was not caused by arsenical poison, which ought indisputably to be evident, before either a cruel mistress should be acquitted of a suspicion of having given it to her servant; or the servant found guilty of having taken it herself. And to this determination it is absolutely necessary that we should be well acquainted not only with the state of bodies which die naturally, but also with the symptoms & effects which are constantly produced by arsenick intensely taken; as well as, if none of the animal fluids may not by any casual alteration in themselves, become the cause of similar effects; which if they should be capable of,



it will be requisite by accurately comparing them together, to discover, if there is not some one in particular, that may indubitably demonstrate the difference between them.

Supposing then, that all persons who profess to examine bodies on so important an occasion, as to acquit or charge any one of self murder, or to determine if any one has, or has not been poisoned, are, as they ought to be, well acquainted with the appearances of bodies who are usually cut of in a state of health and with the symptoms of several diseases, I will proceed to observe.

That the celebrated Dr. Mead, in the second edition of his learned essay on poisons, speaking of corrosive sublimate pag. 107. has the following words: The effects of this poison, when taken inwardly, are violent griping pains with a distension of the belly, and a vomiting of a fussy frothy matter, sometimes mixed with blood with stools of the same, and an insupportable heat and thirst, with cold sweats, tremblings, convulsions &c. See proof of which he brings the following relation.

To a large dog was given a drachm of sublimate mercury mixed with a little brandy, within a quarter of an hour after he fell into terrible vomiting, casting up frequently a viscid

fecal matter every time more and more bloody, he purged the same downwards; all died & spent out with this hard labour, he lay down quietly as it were to sleep, but died the next morning.

The abdomen being opened, a great quantity of extravasated blood was found between the liver & stomach, and between the duplicature of the omentum about the stomach; the guts as well as the stomach were distended & full of a frothy, bloody matter; on the outside they were of a livid colour, within all over red and inflamed down to the very vessels. The fibrous coat of the stomach being taken off, between that and the nervous one, grosser blood was found in several places, as it was also here and there in the lamellae between the these coats.

The like symptoms with these, and manifest signs of a burning corrosion, followed with ulcers in the bowels, Ruysius observed in a young man, who was poisoned with fish-liver oil with his meat.

After having said this to prove that fish-liver is most certainly caustic, he tells us, that it is nevertheless composed of bodies perfectly harmless, for salt, and quicksilver; and that it is from the gravity of the quicksilver, given to the salt in it's union with them

without destroying the figure of the crystals; that it acquires such a corrosive way of acting, the operation of which on the body he thus describes.

In short these crystals, which are to be considered as so many sharp knives or daggers wounding and flaking the tender coats of the stomach, and thereby causing excessive pains, with an alteration of the natural mucus, and (upon the constant force of irritation) continual vomitings, &c., mark of necessity by sticking here and there in the capillary vessels, stop the passage of the blood in several places; where upon it stagnates & produces little inflammations; which growing higher and higher terminate quickly in perfect ulcers and gangrenas.

Again in pag. 124. of the same book, he says, that the destructive quality of arsenic is plainly much the same with that of sublimate corrosive, and as the salts therein together with the material particles do compose pungent crystals, so without all doubt the regimen of this mineral gives a like form to the saline body, which without this weight could be of small effect. The main difference is, that in arsenic we have an addition of sulphur; which does not only strengthen the action of the other parts, in that as a vinculum it keeps them united together, but confiding besides of many

hot and fiery complexion promotes the inflammation of those wounds; which the crystalline spicula make in the membranes of the stomach.

Hence it is evident, that although corrosive sublimate is a very vehement poison, yet arsenic is more so; and Dr. Turner quotes an instance from a learned writer, wherein a wound made on the head with a point wet with oil in which trinear had been infused, brought on vomitings and purgings that proved mortal: and in the Edinburgh medical essays, we have an instance of a person who by only touching with her tongue the tip of her finger that was all arsenic, so discover what illness; though she was certain she swallowed none of it, that twelve hours after became suddenly vertiginous & was affected with most of the common consequences of taking it inwardly; and which by the several ingenious authors who have wrote on the subject are described to be pricking, twitching, itching and burning sensations, a cruel pain and heat at the stomach with raging torture of the bowels which it frequently corrodes and ulcers; a blackness & swelling of the tongue and lips, great distention of the hypochondria, a dryness of the jaws & throat, tremblings, intermitting pulse, failure of strength, dimness of sight, noise in the ears, hiccough, palpitation of the heart, cold sweat,

evidence of the extremities, shiverings, convulsions & a bloating of the whole body; a discoloration of the nose, falling off of the hairs, spots on the skin in several parts, a violent discharge both upwards & downwards, which is sometimes black poisonous and fishy like to cancer, and is accompanied with a gasping & mortification of the stomach & intestines, by some or all of which the force is generally closed with a painful death.

As these are the known symptoms of arterial poison, let us now see if some of the animal fluids by any internal alteration in themselves, may not be productive of the like effluvia.

That we are diseased and rendered sick, by means of those very things which are immediately necessary to life and health, is an observation as old as the time of Hippocrates; That holds true not only with regard to things that are external to the constitution, but also to those internal fluids which are generated in us and are immediately conducive to life and the preservation of health, as the blood, the lymph, and animal spirits. Besides which, there are also others in the body, which though not immediately, are yet so absolutely necessary for health that

that by their becoming dusky or green they lay an unavoidable foundation for distempers. Instead of all other influences of this, as much to the point, I shall here confine myself to the bile; the abundance and necessity of which liquor to the preservation of life and health, are sufficiently known to every one who is acquainted with the rational and solid principles of physic; and as a proof of it's universal utility, there is no one animal in nature destitute of a bilious humour, by the virtue and energy whereof they are not only kept alive but preserved in health. Whenever therefore this humour is deficient, superabundant, or depraved, it must unavoidably be the cause of many distempers, but I shall here confine myself to the description of one only.

It sometimes happens, that the bile is irregularly and in too large a quantity thrown into the intestines from the gall bladder, and is productive of very terrible symptoms; as a nausea, cardialgia, vomiting, gripes, and a bilious diarrhoea; and if it be suppressed, as it often is by sudden fits of anger; it excites fevers, convulsions, spasms, and the most dangerous inflations of the stomach, pain in the back, horrow, rigors, coldness, insupportable thirst, uterine heat, violent

coughs and an erosion of the fræctæ; all which are excellently described by Hippocrates in his book: *de medicis*.

When says he, a certain bitter liquor, which we call bile is diffused; what anæsthesia, what heats and weaknesses forthwith seize the patient; and if it be crude, intercepts, and elevated above it's natural state, or becomes uraginous; what despair, what growings of the viscera and the breast will it not produce, besides the insupportable thirst, violent and frequent vomitings of green hæmorrhæ and pain in the back.

Borichius in *Art. Med. Hægæ*. Tom. 1. Obs. 34. gives us the case of a youth, who by an highly acrid bile was not only afflicted with an erosion of his stomach, but also with most of the same symptoms that are generally produced by poison. The same author tells us, that not only the bile but other humours frequently do affect the body & stomach; that one would be inclined to believe that the persons afflicted with them must have taken a dose of poison.

The learned Hoffman also observes, that it is natural for the bile when rendered highly acrid and coëtic to excite symptoms like those produced by poison; for says he, it corrodes and inflames the tender and flexible membranes of the stomach in a violent manner, and is the cause of most insupportable & excruciating pain. And Borich

Ob. 1. Cant. 2. given as a proof, that the bile may be so corrosive, as to make an abscession like *aqua fortis* when poured upon the earth. Many more authors might be here quoted to prove that these symptoms are producible by a redundant and vitiated bile acting on the living body; but as they are unnecessary, I will proceed to relate what observations have been made on the bodies of such as have died thereby.

Dienbroeck affirms, that upon opening the body of a patient who died of a violent bilious purging; he found the gall bladder filled with a deep green bile, and distended to the bulk of an hen's egg. The same author informs us, that in the Hospital in which he was concerned, the bile lodged in the gall bladder of some of the patients who had died of bilious vomitings & purgings, was on their being dissected found highly green & sanguineous, and particularly that in a young daughter of one Mr. Ulyches who died of a flux, in which the secretions were green, the gall bladder was distended to the bulk of an hen's egg, and filled with pernicious bile; circumstances he had observed also in other children who had died of a like disorder, and in some to whose lives the cholera morbus had put a period.

Having now related the effects both of ardens & bile, it remains only to compare them



together, to demonstrate wherein they differ. First then, it appears that the symptoms of the one, & the other may show themselves equally sudden; and in the case of this poor girl, that there was a crisis for the cause of her disease is only surmised; but that there was a violent fit of passion & that suppressed, which was before shown to be sufficient to produce an overflowing of the bile doc. is evident.

Secondly, a nausea, cardialgie, an inflation of the hypochondria, pains in the back, stomach and bowels; horror, rigor, coldness, insupportable thirst, fevers, convulsions, anxieties, violent vomitings & purgings with an erosion of the gullet, stomach & intestines, are symptoms producible by one, as well as the other.

Thirdly, pricking, swelling and burning symptoms, giddiness, dimness of sight, noise in the ears, vertigo, swellings, swellings of the tongue & whole body; black eruptions, discoloured nails, a falling off of the hair, and a moping texture of the viscera particularly about the stomach; with the symptoms before mentioned to be in common to both, in a more violent degree than ordinary; together with a great discharge of humours mixed with blood, and a violent death in a few hours; are the

common distinguishing effects of arsenical poison taken into the body.

Fourthly, the particular symptoms produced by the bile are a great discharge of yellow & green humour upwards & downwards, a pain fixed rather in the back & right side, than the stomach, from the situation of the liver and gall-bladder; and which are observed, to continued longer before they destroy when produced by the bile, than when they are the effects of arsenic, which generally kills in twenty four hours.

On the whole therefore it is manifest, that when arsenic is the cause of the symptoms before stated; the discharge both upwards & downwards is black, and mixed with blood; which it was not in this case, but it was of a green colour without any blood in it, like what has been before described to be producible by vitiated bile.

When arsenic is the cause, the pain is principally vehement in the stomach; but in this case it was more acute in the back & right side where the liver & gall-bladder are situated, than in the stomach.

When arsenic is the cause, giddiness, dimness of sight, vomits, convulsions & the many nervous symptoms before described to be in common to every poison, or some of them,

generally attend; but in this case, the patient had no symptoms of the kind, except cramps in her legs, which are generally troublesome to every one in whom the liver is affected.

When arsenic is the cause, black spots appear in many parts, & the body feels either partially or universally; yet neither of them happened to this poor girl.

Lastly when arsenic is the cause, the patient seldom supports under its effects above twenty-four hours, but this patient supported it near three times as long.

By inspecting bodies which have died by poison, it has been generally observed, that the stomach has been found inflamed, the natural mucus thereof & of the whole intestine abraded, inflammation, & ulceration in several parts of the viscera, with effusions & extravasations of blood & ichor in one place or other, and lastly that the nails have been discoloured and the hair loose, neither of which circumstances attended here.

On the other hand, every situation which authors describe to have been made by the bile, when that is in fault, unless it be an excoriation, were found in this body, and though an excoriation is one of the most common symptoms of arsenic, yet none appeared in any part of the alimentary tube, nor was there any one change in it that could induce a person who was not

previously poisoned, that she was poisoned; to believe that she was so, unless it was the blackness mentioned to be found in the stomach; and as that was not deprived of it's mucus, or had with it the least sign of a previous ulceration, it cannot be looked upon as a mortification arising from an arterial corrosion; since we are convinced, that the blood by stagnation from many natural causes, may without the least ulceration produce a mortification that has all the appearances with the blackness found in this child's stomach. To all this I must add, that bilious complaints were when this girl died, beginning to be epidemic in the same town. Wherefore on impartially considering every circumstance, there is much stronger reason to believe, that she died of a bilious complaint; than that her death was the effect of any poison.

But if from what has been advanced, this opinion should not be indispensible; certain it is, that the many facts and circumstances recited in it's favour, are too strong to have the contrary admitted, especially if we recollect, that in all such cases where proof is not absolutely convincing; it is the duty of a christian to form his judgement with prudence and deliver it with diffidence; and that by all law both divine and humane, it is infinitely more warrantable; to absolve those who are guilty, than to condemn those who are not so. It being a maxime where

any thing rests on suspicion or doubtful evidence, that the presumption is always in favour of innocence; a stronger example of which, and in a more similar case, is no where to be found than in the influence given us by Dr. Goodall in his history of the royal college of physicians in London, wherein he tells us:

That the opinion of that learned body being asked in regard to the case of M. Lane, who was suspected to die by poison, that although substance was found in his medicines, though his mouth, stomach & bowels were inflamed, ulcerated & mortified, and though he had many stagnations of blood in them; yet it was their joint opinion that from the proofs found on the inspection of the body only, they could not certify affirmatively of the poison.

What evidence or judgment should therefore be given, by any person who undertakes to examine a body by himself, if even those conditions of poison are not found in it? And what opinion shall we form of a jury, who in cases of suspected murder, shall then ever accept any evidence that may be offered the better to enable them to do justice?

To the honour & confidence of those who may have the task, with the reflection, that it may be to be answered for hereafter; I leave the reply.

THE END.





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